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EXAMINER

CHOW, CHIH CHING

ART UNIT

PAPER NUMBER

2192

DATE MAILED: 03/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/023,075

Applicant(s)

GUSIKHIN ET AL.

Examiner

Chih-Ching Chow

Art Unit

2192

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 December 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 and 20-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 and 20-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. This action is responsive to amendment dated December 20, 2005.
2. Per Applicants' request, claims 5, 6, 13, 14, and 15 have been amended, claims 17-19 have been canceled.
3. Claims 1-16, 20-24 remain pending.

Response to Amendment

4. Applicants' amendment filed on 12/20/2005, responding to the 09/20/2005 Office action provided in the 35 USC § 112 (2) rejections for claims 5, 6, 13-16, and 20. The examiner has reviewed the amended claims 5, 6, and 13 respectfully. The rejection to the 35 USC § 112(2) rejections is hereby withdrawn in view of Applicants' amended claims.

Response to Arguments

5. Applicant's arguments, see REMARKS pp. 9-10, filed on December 20, 2005, with respect to the rejection(s) of claim(s) 1-16, 20-24 under 35 USC § 102 (b) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of U.S. Patent No. 6,578,174 by Zizzo. See 35 USC § 103 rejections (claims include the amendments) herein below.

Specification

6. The use of the trademark 'Java' has been noted in this application, paragraph 0016. It should be capitalized wherever it appears and be accompanied by the generic terminology.

Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 4 and 12 recite the limitation "Java". JAVA, which is a bytecode programming language, is a trademark and is used to specify only the source of the so-labeled products, namely SUN Microsystems, Inc. The presence of a trademark name in a claim is not per se improper under 112 (2nd). However, it is important to recognize that a trademark or trade name is used to identify a source of goods, and not the good themselves. It should be capitalized wherever it appears and be accompanied by the generic terminology.

Claim Objections

9. Claims 6-8, 14, 21, and 22 are objected to because of the following informalities: acronyms used in these claims, e.g. 'CAD', 'JPEG' should be spelled out, because the acronyms may change its meaning and intend of use over the time. Appropriate correction is required.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 1-4, 9-12, 15-16, 20, and 23-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gary Alan Van Huben et al. (hereinafter "Van Huben"); in view of U.S. Patent No. 6,578,174 by Zizzo (hereinafter "Zizzo").

CLAIM

1. A virtual reality modeling language (VRML) interface device comprising:
(a) a World Wide Web browser wherein said browser includes a VRML viewer plug-in;

(c) a VRML interface software program installed said browser wherein said program compiles visual information from said reference designator, said X and Y location, said rotation information, and said package type and said VRML viewer plug-in and creates second image file based on said reference designator, said X and Y location, said rotation information, and said package type wherein said second image file can be viewed independent computer platform.

(b) at least one external database comprising a reference designator, an X and Y location, rotation information, and

Van Huben / Zizzo

Van Huben teaches a VRML interface device comprising WWW browser includes a VRML viewer plug-in, see Van Huben's column 9, lines 43-49, "Each client and server in our preferred embodiment, is able to implement cross platform code via interpretation, and thus can implement programs written in cross platform languages like **JAVA** and **VRML**. In such situations, **JAVA** can interact with **VRML** by describing extension modes, acting as scripts, and describing the actions and interactions of **VRML** objects". For item (a) see Van Huben column 27, line 50 into column 28, "WWW/Internet Access".

For item (c), see Van Huben's abstract, "A design control system suitable for use in connection with the **design of integrated circuits (PCB)** and other elements of manufacture **having many parts** (*second image information/file*) which need to be developed in a concurrent engineering environment with **inputs provided by users** and or systems which may be located anywhere in the world provides a **set of control information for coordinating movement of the design information** (*coordinating movement needs reference designator, X and Y coordinates, and rotation information are specified for circuit design board*) through development and to release while providing dynamic tracking of the status of elements of the bills of materials in an integrated and coordinated activity control system utilizing a repository which can be implemented in the form of a database (relational, object oriented, etc.) or using a flat file system." For item (b),

package type for each of a plurality of components wherein said reference designator, said X and Y location, said rotation information, and said package type are created on differing software platforms; and

Van Huben teaches all aspects in claim 1 but does not teach the 'external database' specifically. However Zizzo teaches it in an analogous prior art. For remote circuit design purpose, in particular, see Zizzo's column 4, lines 59-64, "In this embodiment, the portal site provides front-end hardware designers a means to search and get access to IPs of hardware components from both internal and external vendor sources. (*external database, different platforms*) The portal site allows chip designers to search and access various IPs for incorporation into new chip designs." Also see Zizzo's column 11, "The IP core placement step 312 may be accomplished by making table entries indicating the appropriate position coordinates (*reference designator, X and Y location*) of each transferred IP core on the overall design." Further see column 11, lines 37-43, "This automatic connectivity utilizes the support data files transferred to the user 102 by the design platform 104 in step 308. Moreover, the design platform 104 may incorporate a graphical user interface (GUI) to allow a user 102 the ability to place and move (*rotation information*) IP cores within a SoC design. The user 102 places and moves a graphical representation (e.g., symbol) of the selected IP core into the SoC design by moving, copying or dragging the symbol of the selected IP core into the schematic program being used to develop the design." It would have been obvious to a person of ordinary skill in the art at the time of the invention was made to supplement Van Huben's disclosure of the VRML technology by using external database's reference designator taught by Zizzo, for

2. The device as recited claim 1 further comprising a database interface communicate between said browser and said least one external database.

3. The device as recited claim 2 wherein said database interface is common gateway interface (CGI).

4. The device as recited claim 2 wherein said database interface Java Applets routine.

9. A virtual reality modeling language (VRML) interface system for printed circuit board (PCB) manufacturing comprising:

(a) a World Wide Web browser wherein said browser includes a VRML viewer plug-in;

(b) at least one external database storing a reference designator, an X and Y location, rotation information, and package type for

the purpose of facilitating the circuits design by making it easier for designers to locate and incorporate available virtual component blocks into new designs (see Zizzo's Abstract).

For the feature of claim 1 see claim 1 rejection. For 'external database' feature see Van Huben's FIG. 1, at least one external database communicated within the network.

For the feature of claim 2 see claim 2 rejection. For the CGI feature, see Van Huben's column 18, lines 7-9, "the DCS permits an authorized user to send commands through the Internet Common Gateway Interface (CGI) to query information from the DCS or invoke Designer Initiated Library Processes (DILPs)"

For the feature of claim 2 see claim 2 rejection. As mentioned in rejection 1, **JAVA can interact with VRML by describing extension modes, acting as scripts, and describing the actions and interactions of VRML objects, it's also a well known skill for people in the art to use JAVA applet because it is to be executed in a JAVA-compatible web browser.**

Van Huben and Zizzo's disclosures are for circuit design use, see claim 1 rejection.

each of a plurality of components wherein said reference designator, said X and Y location, said rotation information, and said package type for each of said plurality of components are created on differing software platforms;

(c) a VRML interface software program installed onto said browser wherein said program compiles visual information from said reference designator, said X and Y location, said rotation information, and said package type for each of said plurality of components and creates a second image file based on said reference designator, said X and Y location, said rotation information, and said package type for each of said plurality of components wherein said second image file can be viewed independent of computer platform; and

(d) a printed circuit board (PCB) assembly facility wherein assembly operators assemble PCBs from said second image file.

10. The system as recited claim 9 further comprising a database interface to communicate between said browser said at least one external database.

For the feature of claim 9 see claim 9 rejection. For the rest of claim 10 feature see claim 2 rejection.

11. The system as recited claim 10 wherein said database interface is a common gateway interface (CGI).

For the feature of claim 10 see claim 10 rejection. For the rest of claim 11 feature see claim 3 rejection.

12. The system as recited in claim 10 wherein said database interface is a Java Applets routine.

For the feature of claim 10 see claim 10 rejection. For the rest of claim 12 feature see claim 4 rejection.

15. The system as recited in claim 9 wherein said plurality of first image files is partially comprised of a VRML database.

For the feature of claim 9 see claim 9 rejection. For the rest of the feature see claim 1 rejection.

16. The system as recited in claim 15 wherein said VRML database is partially comprised of fiducials.

For the feature of claim 15 see claim 15 rejection. As specified in the Specification paragraph 0015, 'Fiducials' are coordinate location information points, Van Huben's disclosure has covered 'fiducials' since Van Huben's disclosure is for circuit design, which needs to specifically identify circuit positions and components.

20. The system as recited in claim 15 wherein said VRML database is partially comprised of package type information for components to be assembled on said PCB.

For the feature of claim 15 see claim 15 rejection. For the rest of claim 20 feature see claim 1 rejection.

23. A method to generate a second VRML image file based on a reference designator, an X and Y location, rotation information, and package type for each of a plurality of components created from differing software platforms comprising the steps of:

(a) assembling at least one external database that contains said reference designator, said X and Y location, said rotation information, and said package type for each of said plurality of components created from differing software platforms;

(b) loading a VRML interface software program onto a World Wide Web (WWW) browser wherein said program compiles visual information from said reference designator, said X and Y location, said rotation information, and said package type for each of said plurality of components and creates a second VRML image file based on said reference designator, said X and Y location, said rotation information, and said package type for each of said plurality of components and creates a second VRML image file based on said reference designator, said X and Y

For items (a)-(c) see claim 1 rejection, for item (d), see Van Huben's column 27, lines 51-57, under the **WWW/Internet Access** (Section 1.18), "The DCS provides a mechanism which permits access to all process and psuedo process results through the **World Wide Web**. Key quality control indicators can be exported out (*can download required software*) of the DCS into an accessible format by users on the WWW. Usually these results would exist in a secure repository which could only be accessed by **WWW** users who are working on the project."

location, said rotation information, and said package type for each of said plurality of components wherein said VRML image file can be viewed independent of computer platform;

(c) accessing WWW server by using said WWW browser and using a database interface to access said reference designator, said X and Y location, said rotation information, and said package type for each of said plurality of components; and

(d) downloading said reference designator, said X and Y location, said rotation information, and said package type for each of said plurality of components and using said VRML interface software program to generate said second image file.

24. The method as recited in claim 23 further comprising step of viewing said second image file by utilizing said WWW browser wherein a VRML viewer plug-in is loaded onto said browser.

For the feature of claim 23 see claim 23 rejection. For the rest of claim 24 feature see claim 1 rejection.

11. Claims 7-8, 21-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gary Alan Van Huben et al. (hereinafter "Van Huben"); in view of U.S. Patent No. 6,578,174 by Zizzo (hereinafter "Zizzo"); further in view of US 2002/0041287 by Peter G. Engeldrum et al. (hereinafter "Engeldrum").

CLAIM

7. The device as recited claim 1 wherein said second image files are composed JPEG format that can be viewed independent of computer platform.

Van Huben / Zizzo / Engeldrum

For the feature of claim 1 see claim 1 rejection. Van Huben and Zizzo teach the technology that enables development using VRML for web based environment but does not teach the 'JPEG' specifically. However Engeldrum teaches 'JPEG' in an analogous art. For image format in particular, see Engeldrum, paragraph 42,

“image 52 as then displayed on display 22 may be a more accurate color representation of a reference or author image, image 56 than may otherwise be achieved. Image 56 may be corrected from any conventional format including but not limited to rendering formats such as PCL and PDF, image formats such as JPEG 2000, AVI, MPEG 2, MPEG3, MPEG4, Quick time, Real Media, VRML, ART, WMF, FPX, BMP, PCX, TIFF, GIF, flash, or postscript.” Further more, an example is given in Powers, “Uses the given image file (GIF or JPEG) as the tiled texture for the sky above the world.”

It would have been obvious to a person of ordinary skill in the art at the time of the invention was made to supplement Van Huben’s disclosure of the VRML technology and Zizzo’s using external database reference designator by using the JPEG and GIF format taught by Engeldrum, for the purpose of displaying and correcting the JPEG and GIF image format files for a better system display (see Engeldrum, paragraph 42).

8. The device as recited claim 1 wherein said second image files are composed in a GIF format that can be viewed independent computer platform.

Same as claim 7 rejection.

21. The system as recited in claim 9 wherein said second image files are composed in a JPEG format that can be viewed independent of computer platform.

For the feature of claim 9 see claim 9 rejection. For the rest of claim 21 feature see claim 7 rejection.

22. The system as recited in claim 9 wherein said second image files are composed in a GIF format that can viewed independent of computer platform.

For the feature of claim 9 see claim 9 rejection. For the rest of claim 22 feature see claim 8 rejection.

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12. Claims 5-6, and 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gary Alan Van Huben et al. (hereinafter "Van Huben"); in view of U.S. Patent No. 6,578,174 by Zizzo (hereinafter "Zizzo"); further in view of U.S. Patent no. 6, 665,854 by Fujiwara et al. (hereinafter "Fujiwara").

Claim

5. The device as recited claim 1 wherein said plurality first image files are composed in a Gerber format.

Van Huben / Zizzo / Fujiwara

For the feature of claim 1 see claim 1 rejection. Gerber format is a design choice for a CAD tool. In Van Huben's disclosure, it does not limit to a certain tool, any CAD produced image model would apply. Van Huben teaches the technology that enables development using VRML for web based environment but does not teach the 'Gerber format' specifically. However Fujiwara teaches 'Gerber format' in an analogous art. For checking mount quality of circuit board in particular, see Fujiwara, column 10, lines 40-45, "The CAD data also includes information about detailed shape of the circuit board, such as actual shape or perforations, as variable-length data. This variable-length data can be represented by using any shape representation format, generally in a Gerber format."

It would have been obvious to a person of ordinary skill in the art at the time of the invention was made to supplement Van Huben's disclosure of the VRML technology for a circuit design work and Zizzo's using external database reference designator by using 'Gerber format' taught by Fujiwara, for the purpose of representing a shape of a circuit board more efficiently (see Fujiwara, column 10, lines 44-45).

6. The device as recited claim 1 wherein said plurality image files are composed in a CAD format.

Same as claim 5 rejection.

13. The system as recited in claim 9 wherein said plurality of first image files is partially comprised of Gerber images of PCB artwork.

For the feature of claim 9 see claim 9 rejection. For the rest of claim 13 feature see claim 5 rejection.

14. The system as recited in claim 9 wherein said plurality of first image files is partially comprised of CAD images of electronic components used in assembling said PCB.

For the feature of claim 9 see claim 9 rejection. For the rest of claim 14 feature see claim 6 rejection.

Conclusion

The following summarizes the status of the claims:

35 USC § 112(2) rejection: Claims 4, 12

35 USC § 103 rejection: Claims 1-16, 20-24

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chih-Ching Chow whose telephone number is 571-272-3693. The examiner can normally be reached on 7:30am - 4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan Q. Dam can be reached on 571-272-3695. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Any inquiry of a general nature of relating to the status of this application should be directed to the TC2100 Group receptionist: 571-272-2100.

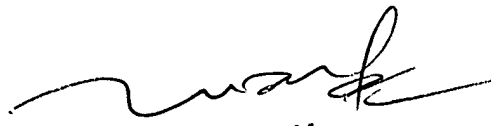
Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you

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have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Chih-Ching Chow
Examiner
Art Unit 2192
March 01, 2005

CC



TUAN DAM
SUPERVISORY PATENT EXAMINER